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(21)Application number : 08-090400 (71)Applicant : HITACHI METALS LTD

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(54) SINTERED PERMANENT MAGNET

(57)Abstract:

PROBLEM TO BE SOLVED: To improve the corrosion resistance by using an R-Fe-B based sintered permanent magnet having a specified main phase crystal grain size or less.

SOLUTION: A sintered permanent magnet has a compsn. R (one or more rare earth elements, including Y) 27.0–31.0wt.%, B 0.52.0wt.%, N 0.02–0.15wt.%, O 0.25wt.% or less (not 0wt.%), C 0.15wt.% (not 0wt.%) and Fe. The area sum of the main phase crystal grains of 10 μ m or less is 80% of the total area of the magnet main phase or more and the area sum of those grains of 13 μ m or more is 10% or less. Part of Fe of this magnet may be substituted by at least one of Nb 0.1–2.0wt.%, Al 0.02–2.0wt.%, Co 0.3–5.0wt.%, Ga 0.01–0.5wt.%, and Cu 0.01–1.0wt%. Thus it is possible to obtain an R-Fe-B based sintered permanent magnet superior in corrosion resistance, without deteriorating the magnetic characteristics.

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